# Fractions

Learning Objectives:
- Read, write, order and compare common fractions and mixed numbers

- Find fractions of a whole

## Recap

Donna is raising money to build a new village hall.

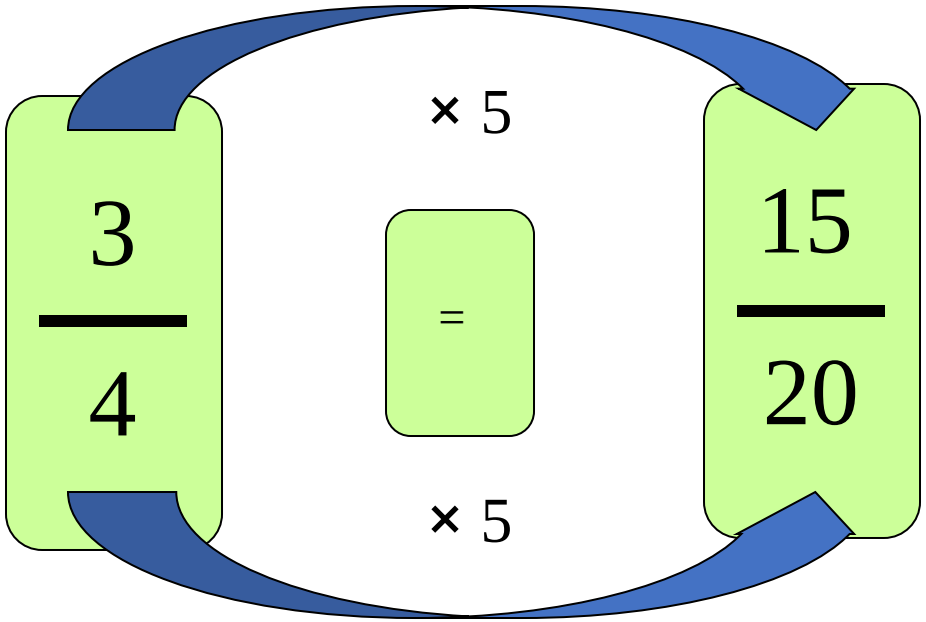
People can have their name printed on a brick for the hall.
Each person pays £28 for a brick with their name on.

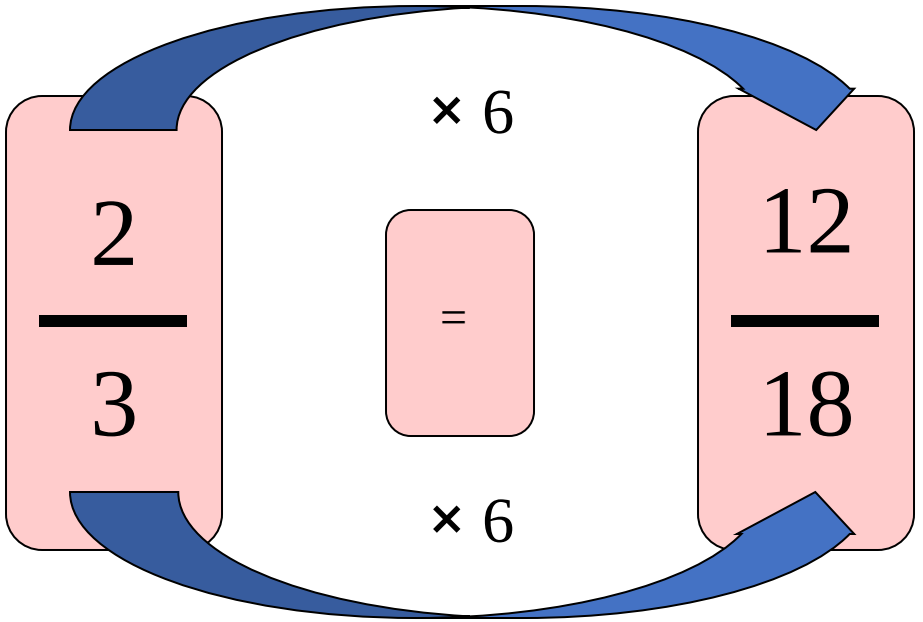
Donna hopes to raise £12 000 by selling bricks.

She thinks she will need to sell 420 bricks to reach her target of £12 000

(a) Are 420 bricks enough to reach her target?
Show a check of your working. (3)

# Equivalent Fractions



# Equivalent Fractions – Questions

1) $\frac{2}{3} = \frac{\square}{6}$

2) $\frac{1}{5} = \frac{\square}{20}$

3) $\frac{5}{7} = \frac{10}{\square}$

4) $\frac{4}{\square} = \frac{12}{21}$

5) $\frac{3}{8} = \frac{9}{\square}$

6) $\frac{\square}{5} = \frac{15}{25}$

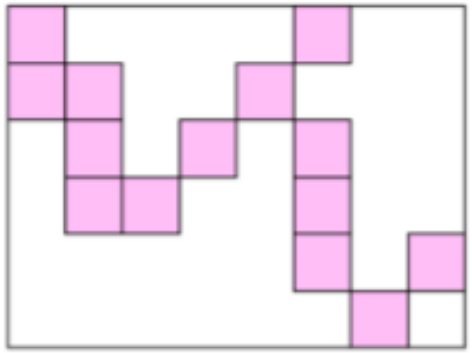
# Try this!

Over 20 days in February, it rained on 12 days.

What fraction of the days were rainy?
Simplify your answer

# Try this!

Here is a rectangle with 14 identical squares shaded inside it.



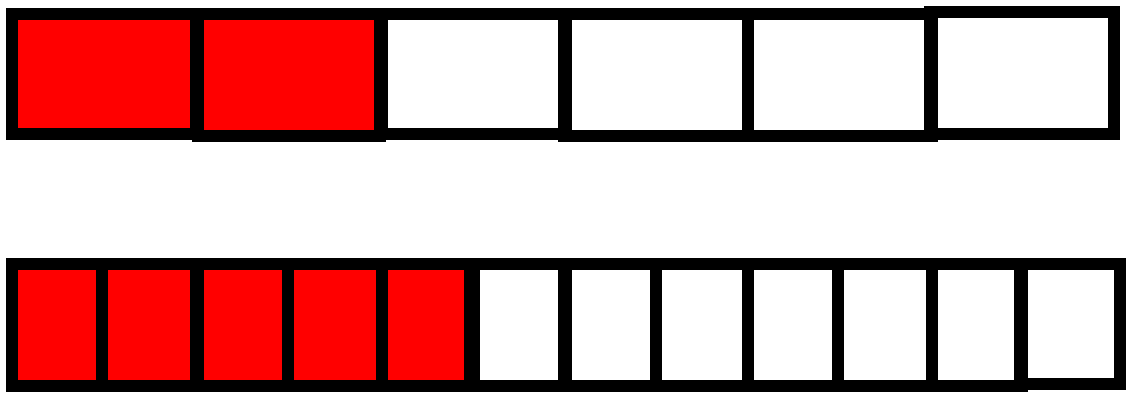
What fraction of the rectangle is shaded?
Simplify your answer

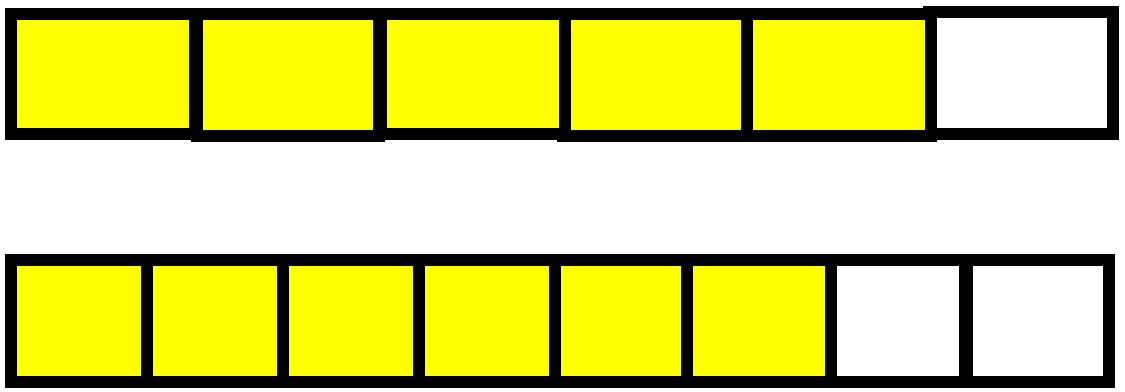
# Comparing Fractions

Compare these fractions, using <, > or =
Can you explain why and fill in the blank?

$$\frac{2}{6} \bigcirc \frac{5}{12}$$

$$\frac{5}{6} \bigcirc \frac{6}{8}$$





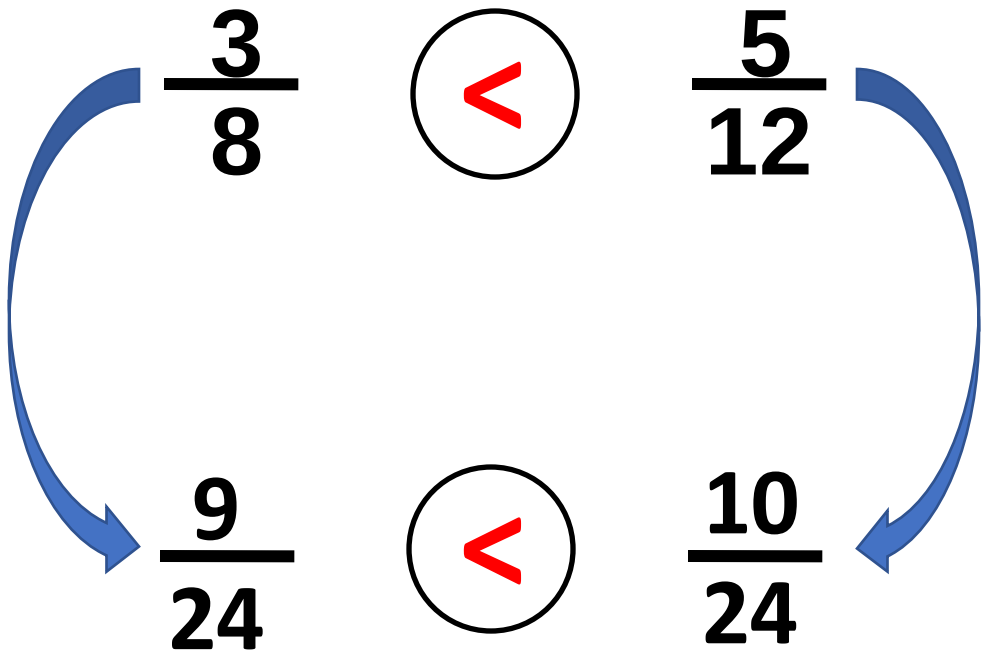
How can we compare fractions without using a diagram?

# Comparing Fractions

Make denominators the same:

8 needs to be multiplied by 3

12 needs to be multiplied by 2




Compare numerators:

10 is bigger than 9 therefore 5/12 is bigger than 3/8

Common denominator:

8 and 12 both go into **24**

Compare these fractions, using <, > or =

1) $\frac{9}{11}$ ☐ $\frac{1}{2}$

2) $\frac{1}{3}$ ☐ $\frac{2}{11}$

3) $\frac{8}{12}$ ☐ $\frac{2}{5}$

4) $\frac{1}{6}$ ☐ $\frac{2}{3}$

5) $\frac{3}{12}$ ☐ $\frac{1}{6}$

# Ordering Fractions

Put the following fractions in order from biggest to smallest:

$\frac{1}{6}$ $\frac{1}{3}$ $\frac{11}{18}$ $\frac{2}{9}$

$\frac{3}{18}$ $\frac{6}{18}$ $\frac{11}{18}$ $\frac{4}{18}$

- The common denominator is 18.
- Each fraction needs to then be converted so that all the denominators are the same.
- The numerators can then be compared.

$\frac{11}{18}$, $\frac{1}{3}$, $\frac{2}{9}$, $\frac{1}{6}$

# Ordering Fractions - Questions

Put the following fractions in order from smallest to biggest:

1) $\frac{3}{4}$ , $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{3}{8}$

2) $\frac{2}{5}$ , $\frac{6}{10}$ , $\frac{1}{2}$ , $\frac{3}{5}$

3) $\frac{3}{4}$ , $\frac{1}{3}$ , $\frac{1}{2}$ , $\frac{5}{12}$

4) $\frac{2}{3}$ , $\frac{1}{4}$ , $\frac{5}{6}$ , $\frac{1}{2}$

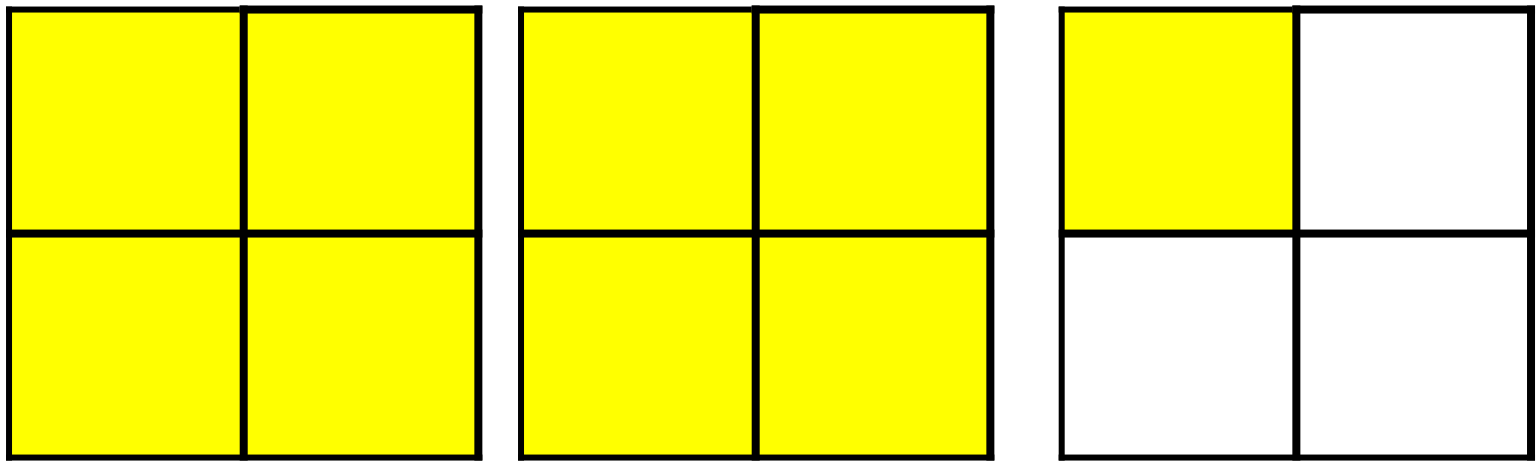
# Mixed Numbers

2 full shapes coloured in

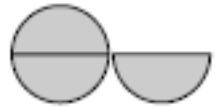
…with 1 more part shaded in

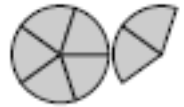
$$2\frac{1}{4}$$

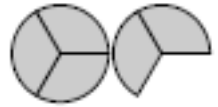
Shape is divided into 4 parts

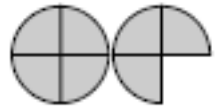


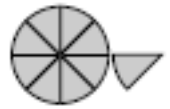
Write the following as Mixed Numbers:

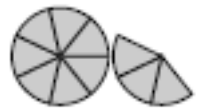
1) 

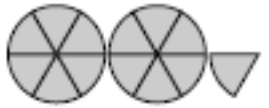
2) 

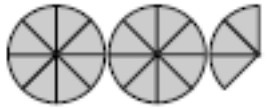
3) 

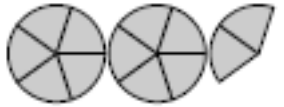
4) 

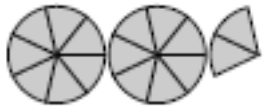
5) 

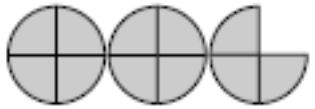
6) 

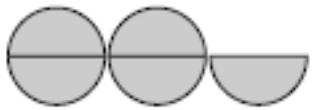
7) 

8) 

9) 

10) 

11) 

12) 

# Try this!

Gordon needs to work out the ironing bill for Miss Hazel.
Miss Hazel is not a new customer.

Gordon charges

- £12 for clothes weighing up to a total of $2\frac{1}{2}$ kg
- and £4.50 for every 1 kg over $2\frac{1}{2}$ kg.

The ticket shows the total weight of the clothes.

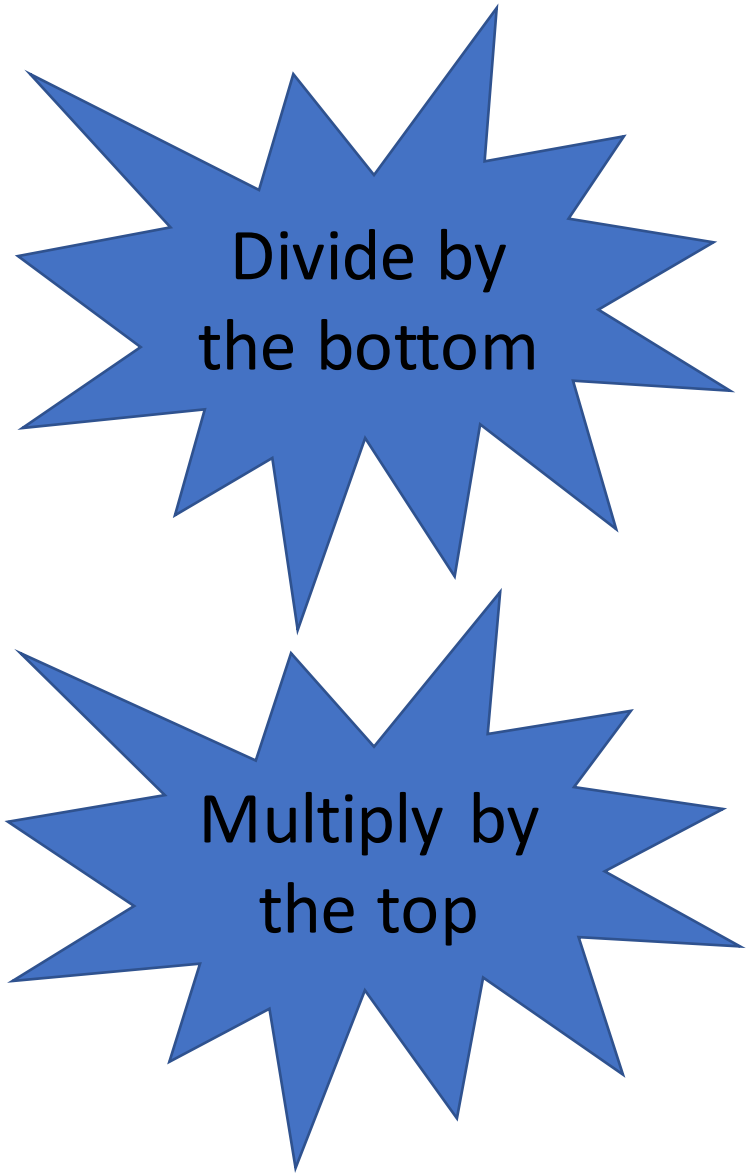
| Ironing Service | 3318 |
|---|---|
| Name | Miss Hazel |
| Address | 61 Osborne Road, Roditch |
| Collection date | 3rd July |
| Weight | $5\frac{1}{2}$ kg |
| Return date | 8th July |

Gordon works out that the bill is £25

(c) Is Gordon correct?
Show why you think this. **(4)**

# Fractions of an Amount

Find $\frac{2}{5}$ of 100




$100 \div 5 = 20$

$20 \times 2 = \underline{40}$

# Fraction of an Amount - Questions

Which is bigger?

(a) $\frac{1}{3}$ of 21 *or* $\frac{1}{2}$ of 12

(b) $\frac{1}{6}$ of 30 *or* $\frac{2}{3}$ of 9

(c) $\frac{2}{5}$ of 65 *or* $\frac{3}{4}$ of 32

(d) $\frac{1}{5}$ of 2m *or* $\frac{3}{4}$ of 60cm

(e) $\frac{3}{8}$ of a day *or* $\frac{1}{10}$ of 85 hours

(f) $\frac{7}{15}$ of 480 *or* $\frac{2}{3}$ of 453

(g) $\frac{3}{10}$ of 395 *or* $\frac{2}{7}$ of 420

# Exam Question

The normal price for a ticket to the park is £12
There is a discount for groups.

A group of 10 people will save $\frac{1}{5}$ of the normal price.

Jane thinks a group of 10 people will save £25 in total.

(b) Will a group of 10 people save £25 in total?
Show a check of your working. (4)

# Exam Question

Kay asks 84 people to complete a survey about the exhibition.
Only 21 people complete the survey.

Kay wants to know what 21 is as a fraction of 84

(a) Write down 21 as a fraction of 84
Write your answer as a fraction in its simplest form. **(2)**

# Exam Question

Donna has a target to raise £145 950

She wants to raise at least $\frac{1}{3}$ of this target in the first 6 months of fundraising.

Work out $\frac{1}{3}$ of £145 950 **(2)**

# Exam Question

Marta manages the rentals of beach huts.

There are 96 beach huts.
24 of these beach huts are available to rent.

Marta thinks that $\frac{1}{4}$ of the beach huts are available to rent.

Is Marta correct?
Show why you think this. **(2)**

# Exam Question

The table shows the amount of money collected by each team for the rowing event.

| Team | Amount collected |
|---|---|
| A | £2347 |
| B | £3862 |
| C | £3581 |
| D | £1954 |

Luke was in team A.
He says

> Team A collected $\frac{1}{5}$ of the total amount.

(a) Is $\frac{1}{5}$ of the total amount of money collected £2347?

**(3)**

# Exam Question

There is a footpath along the Cliffs of Moher.
The length of the footpath is 24 km.

Clive and his friend walk a distance of 16 km along the footpath.

Clive says

> We have walked three quarters of the length of the footpath.

(b) Is three quarters of the length of the footpath 16 km?
Show a check of your working. **(4)**